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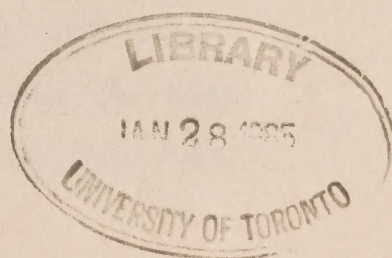
DOMINION BUREAU OF STATISTICS

GENERAL STATISTICS BRANCH

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COMPARISON OF THE GEOGRAPHICAL AND THE
INDUSTRIAL DISTRIBUTION OF THE WORKERS
INCLUDED IN THE MONTHLY EMPLOYMENT
SURVEYS, WITH THE GEOGRAPHICAL AND
INDUSTRIAL DISTRIBUTION OF THE
WORKERS ENUMERATED IN THE
CENSUS OF JUNE 1, 1931.



Published by Authority of the Hon. W.D. Euler, M.P.,
Minister of Trade and Commerce.

OTTAWA

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A p p r e c i a t i o n

The Dominion Bureau of Statistics takes this opportunity of publicly expressing its appreciation of the co-operation rendered by firms and their officers in furnishing the monthly statistics on employment. To their promptness and regularity in reporting are largely due the generally representative nature of the surveys of this subject. It is gratifying to find an increasing interest on the part of those completing the monthly questionnaires manifested in a desire fully to understand just what data are required, and to supply these in as great detail as possible. To these payroll officials, the Bureau wishes to extend its sincere thanks for their co-operation and interest in this highly important work.

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DEPARTMENT OF TRADE AND COMMERCE
DOMINION BUREAU OF STATISTICS
GENERAL STATISTICS BRANCH
OTTAWA - CANADA

Issued February 11, 1936.

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Memorandum Showing the Distribution of the Workers Covered in the
Monthly Surveys of Employment in comparison with the Distribution
of the Workers Enumerated in the Census of June 1, 1931.

The question of the geographical and industrial distribution of the workers sampled in the monthly surveys of employment is highly important in its intimate connection with their ability accurately to reflect changes in the general volume of employment. The only complete record of the distribution of the gainfully occupied population is obtained in the decennial censuses, no data being available for the inter-censal years. Owing to the magnitude of the work involved, it is not possible for the statistics on occupations and industries to be compiled for some time after the decennial census is taken. It therefore follows that only at infrequent intervals and several years after the date to which the figures apply, are general statistics available showing the workers' distribution by province, city and industry, to serve as a yardstick against which may be measured the distribution of the workers sampled in the monthly employment record.

The industrial composition of the population generally is continually though slowly changing with the development of new industries and services and the obsolescence of former processes of manufacture, extraction, transportation or other application of labour, while migration of workers, particularly in a comparatively new country, is continuously underway with the opening up of new areas and in response to the movements of industry. The composition of the employment sample for the different units of population and industries, likewise undergoes constant changes, reflecting these tendencies, and also to some extent the successful exploration of fresh sources of information regarding firms not theretofore co-operating in furnishing payroll data. The census figures of the geographical and industrial distribution of occupied persons and the monthly employment statistics are, of course, both considerably affected in their interrelation by the varying degrees of prosperity found in given units, a variation of decided importance during such a period of depression as has extended over the last few years.

In preparing the monthly statistics of employment, it is necessary to give adequate representation not only to industries, but also to the provinces and the municipalities. The varying industrial composition of these units and the varying scales of production therein, add materially to the difficulties of securing a generally representative index within a short space of time and at a reasonable cost. The monthly employment returns, based on material coming from all parts of the Dominion, are released in final form for the economic areas, the leading industrial cities and a large number of industries, from three to four weeks after the date to which they apply.

1.- THE DISTRIBUTION OF WORKERS IN INDUSTRY.

The census figures are the summation of statistical facts largely furnished by individuals, and as such, generally permit of more exact classification industrially than is possible where one officer in an establishment furnishes data for the total number of employees in such establishment, which is necessarily classified according to the principal product manufactured or handled, or the principal line of business followed, without regard to subsidiary industries. The industrial classifications used by the decennial census and the employment statistics differ in several important respects, complicating the making of comparisons between the two sets of figures; these differences are outlined in succeeding paragraphs.

Owing to the seasonal nature of many Canadian industries, it is certain that a census taken at a date other than June 1, would have indicated an industrial distribution differing in many respects from that representative of conditions in the early summer.

The census aggregates include those working in industries outside the scope of the monthly employment record - notably in agriculture, fishing, trapping, finance, domestic, professional and other kinds of private service, and those engaged in the administration of the various governmental services and bodies. While these classes are not, of course, immune to the risk of unemployment, they are not usually regarded as subject to fluctuations in their employment arising from general market conditions, and their employment cannot be considered as barometric to the same degree as, for example, that of

manufacturing operatives, construction workers, etc. Among the industries in the above list which employ labour, the unit of production is usually so small (except in financial and governmental services) as to make very difficult and costly the collection of any current statistics on employment. Consequently, no effort has been made to include such classes of workers in the monthly surveys, so that a more significant comparison lies in that between the wage-earners in the industries common to both sets of figures.

The census figures include a certain number of workers of whom no industrial classification is possible in spite of intensive efforts made to this end. In the comparison between the census and the monthly employment figures, these unspecified workers present a special difficulty incapable of entirely satisfactory solution. It is not likely that all persons failing to state the industry in which they were employed would belong in the groups covered in the monthly surveys; while many of them would probably correctly be classified in construction, mining, manufacturing, or in some other of the groups included in the latter, others equally likely would be workers in the non-included classes. It is probable that the unspecified workers belong in certain seasons of the year to the included industries and in other periods to the non-included classes. These unclassified wage-earners may be treated in three ways - wholly excluded from the included classes, wholly included, or divided pro rata among the various industrial groups enumerated. The last method has been followed in the final comparison.

As already stated, the industrial classifications used in the collection of the census and the monthly employment data materially differ. The following are examples of the existing differences.

In the employment statistics code

In the census code

- | | |
|---|--|
| (a) Manufacturing includes | |
| (1) Electric light and power | Electric light and power constitute a separate group. |
| (2) Shipbuilding | Is listed under construction |
| (3) Certain garages and service stations where repairing is the chief work performed. | These are listed under transportation and communications, in custom and repair and also under trade. |
| (4) Certain clothing and millinery establishments. | These are grouped under trade and with the custom and repair classes. |
| (5) Certain dairies. | These are listed under trade. |
| (6) Certain classes of mill employees grouped under mining in the census classification. | - |
| (b) - | Mining includes certain classes listed under manufacturing in the employment code. |
| (c) Communications are listed separately. | These are grouped with transportation. |
| (d) (1) Construction and maintenance includes workers engaged on such work for public authorities. | (1) Such workers are in some cases listed under municipal services, which are not included in the monthly employment surveys. |
| (2) Also includes workers engaged in railway construction and maintenance. | (2) These are listed under transportation in the case of maintenance workers; railroad construction workers are partly classed under railway transportation, with the remainder in the construction group. |
| (e) Trade is depleted in the employment statistics classification mainly in favour of manufacturing and to a lesser extent in favour of services. | - |
| (f) - | Unspecified workers. |

Partial adjustment between industries can be made in the census data to facilitate comparisons with the employment returns, but there are cases where the groups cannot be re-arranged and the census figures must be used as they stand. The greatest changes necessary, (and that could be effected) result in an increase in the ratio of occupied persons in the census manufacturing group, thereby bringing its weighting closer to that of the employment returns. However, after all possible re-arrangements are made, it must again be emphasized that a considerable part of the disparities in the proportions represents differences in classification that cannot be adjusted; were the same industrial classification used in the compilation of the two sets of figures, the ratios would be closer than at present.

The foregoing must be borne in mind in the using the comparisons made in this memorandum, which are based on the statistics for the census date (June 1, 1931). Since then, the number of co-operating firms^{1/} has considerably increased, bringing about certain changes in the industrial composition of the sample. These changes generally are in the direction of closer correspondence with the census distribution.

The census of occupations showed 2,570,097 wage-earners in the Dominion, of whom 2,100,139 or 81.7 p.c. were at work on the census date (June 1, 1931). It is obviously with those at work that the monthly employment figures for the same date must be compared. The 7,865 firms making returns for June 1, 1931, reported 940,875 employees, being 36.6 p.c. of the total number of persons reporting themselves as actual or potential wage-earners, and 44.8 p.c. of those at work in all industries at the census date. When the classes of workers previously mentioned as not covered in the employment surveys are deducted from the census figures, there remains a total of 1,318,954 persons at work at the census date in the industries sampled in the monthly record, or a total of 1,369,351 if a due proportion of the unspecified workers are included. The employment survey for June 1, 1931, constituted 71.3 p.c. of this adjusted figure, i.e. of the census total for the comparable industries without the unspecified workers, and 63.7 p.c. if a proportion of the unspecified workers are regarded as belonging in the census statistics adjusted industrially for this comparison. This sample may be considered quite adequate, but it would be rather larger if comparison could be made with a similar census taken at the present time, since the number of co-operating firms is constantly growing, having risen from 7,965 at June 1, 1931 to 9,270^{1/} at June 1, 1935; the June 1 comparison is here used so that the seasonal factor may not enter into the case. The increase in the co-operating employers is accompanied by a growth in the ratio of wage-earners sampled, though the latter increase is by no means in proportion to the gain in the number of reports tabulated, owing to the fact that the firms now being added to the mailing list generally incline to employ staffs below the average.

The accompanying table consists of two sections: Part 1 contains only the census statistics, while in Part 2 are given the latter as re-arranged for comparison with the monthly employment data, also shown therein.

The first part shows (a) the total wage-earners and the total number at work as enumerated in the census, in the form in which the figures are published in Census Vol. VI, Table II. In (b) are given the figures of (a) adjusted, insofar as is possible, to conform to the classification of industries used since 1920 in the collection of the monthly employment statistics. The proportion that those at work in the adjusted industrial groups constituted of the total number of wage-earners in the same classes, is given in column 5, illustrating the varying degrees of activity prevailing in these

1/ The number of firms co-operating with the Dominion Bureau of Statistics shows a continual increase resulting (1) from the establishment of new industries, (2) from more regular co-operation on the part of employers and (3) from the fact that detailed statistics regarding locality and industry are being furnished by a steadily increasing number of firms. The different branches of a business organization operating in various centres appear in the tabulation as separate firms in these centres when it is possible to obtain separate reports. Similarly, employers appear under each of the industries for which separate reports are furnished, for example, under logging and sawmilling. The number of firms, as used in the employment surveys, might more precisely be described as the number of reports tabulated.

In calculating the index numbers of employment, adjustment is made for the inclusion of newly reporting firms, while allowance is also made for the loss in employment resulting when co-operating businesses cease to operate.

industries at the census date. The final column (6) shows the relative weights^{1/}, or percentage industrial distribution, of those at work in the adjusted groups, to the total number at work as 100 p.c. This part of the table is given mainly to illustrate the changes which were made in the industrial grouping of the published census figures to bring about greater comparability with the employment classification.

In part 2 are given the census statistics of the number at work, as adjusted for the purposes of this memorandum, including the apportionment of the unspecified workers, pro rata, among those whose industries were named. The industrial distribution of the persons covered in the employment survey for June 1, 1931, is also shown.

The industrial distribution of the workers enumerated in the census, as a proportion of the total at work in the same industries as 100 p.c., shown in column 3, differs from the distribution of those included in the employment statistics for June 1, 1931, given in column 5. According to the census distribution, manufacturing, mining, communications and construction were over-represented in the monthly surveys of employment, while logging, transportation, services and trade were under-represented. In many cases, the nature of the work and the business organization make such differences inevitable with present facilities. Column 7 in this table illustrates the considerable variation in the size of the employment statistics' representation of the different industries, which at June 1, 1931, ranged from 32.0 p.c. in services (adjusted to conform to the employment statistics service group) and 35.3 p.c. in trade, to 82.8 p.c. in manufacturing and 96.9 p.c. in mining. Explanations in regard to these disparities and also in regard to the discrepancies in the proportion of total workers covered, are given in succeeding paragraphs.

Manufacturing.-- The representation in the manufacturing industries, as would be expected, is particularly large. Several factors contribute to this result, among which may be cited, the fixed places of business maintained by manufacturers, ordinarily in centres having easy communication with outside points; their familiarity with the statistical returns required by the various governmental authorities and their recognition of the need for the collection of such statistics. Manufacturers are widely listed in trade journals and directories, and generally seek to advertise their products. Not only is a disproportionately large representation in factory employment expected, but it is also not undesirable from many points of view, notably on account of the wide diversity of the industries so classed, with their varying seasonal movements and their general sensitiveness to fluctuations in current economic conditions.

The sample of 82.8 p.c. of the total factory employment is fully adequate; while it would probably appear rather smaller were the industrial classification identical with that used in collecting the census data, it would still be ample. A more perfect re-adjustment of the figures would mainly take from the number in manufactures, where the apparent representation is overly high, and add chiefly to that in trade. This would, of course, reduce the relative weight of factory employment in the sample, increasing that in trade, thus bringing these weights more in line with the census weighting; the employees of the co-operating manufacturers constituted 52.1 p.c. of all persons included in the June 1, 1931, survey of employment, while the relative weight of factory employment in the census distribution was 43.2 p.c.

1/ A brief explanation of the term "relative weight" as used here and in the monthly employment surveys might ensure better understanding of the data, since it appears that the significance of this term is not always fully understood. The expression as used in connection with the statistics of employment since 1921, does not indicate any effort to weight the published figures in accordance with any standard industrial distribution - for one reason, because no standards are available except from the decennial censuses; the 1921 employment data were not considered suitable for comparison with the results of the 1921 census, while a comparison with the 1931 census has only fairly recently become possible.

The relative weight simply shows the numerical distribution of the workers reported in the specified industry, or unit of population, at a given date, with the total number reported in all industries in the Dominion at the same date, as 100 p.c. Thus, the June 1, 1931, relative weight of 52.1 for manufacturing indicates that the 489,837 employees of the co-operating manufacturers constituted 52.1 p.c. of the 940,875 workers reported in all industries in the same month. Similarly, in logging, the 14,520 reported workers formed 1.5 p.c. of the same total of 940,875, and so on throughout the complete list of industries. The reason for giving the relative weights is simply to enable those interested in the subject roughly to assess at a glance the importance of any industry or locality in the general employment situation as revealed by the firms making returns. The term "relative weight" used here in connection with the census statistics has the same significance as in the employment data, i.e., it shows the percentage obtained by dividing the figure for the given industry or unit of population, by the total at work in the included industries as a whole.

Part 1.- The Number of Wage-Earners and the Number at Work, as Enumerated in the Census of June 1, 1931.^{1/}

Industries	"A"		"B"			
	Grouped According to the Census Classification		Regrouped to afford a closer comparison with the monthly employment data			
	Total Wage-Earners	Total number at work	Total Wage-Earners	Total number at work	P.C. at work in adjusted industries, to total number in such industries	Relative weight of workers in included industries in Col. 4 to total number in such industries as 100 p.c.
	(1)	(2)	(3)	(4)	(5)	(6)
All Industries	2,570,097	2,100,139	2,570,097	2,100,139	81.7	
The Included Industries	1,523,813	1,235,102	1,621,649	1,318,954	81.3	100.0
Manufacturing	606,617	504,621	684,464	570,146	83.3	43.2
Electric current	18,938	17,122	(Included with Manufacturing)		90.4	-
Logging	47,409	28,795	47,409	28,795	60.7	2.2
Mining	68,962	46,934	68,962	46,934	68.1	3.6
Communications)	283,675	244,190	35,667	32,463	91.0	2.5
Transportation)			201,461	171,240	85.0	13.0
Construction	217,105	143,386	234,421	160,654	68.5	12.2
Services	See below	See below	78,617	68,418	87.0	5.1
Trade	281,107	250,054	270,648	240,304	88.8	18.2
Unspecified	168,881	77,296	168,881	77,296	45.8	
The Non-included Industries	877,403	787,741	779,567	703,889	90.3	
Agriculture	198,592	167,776	198,592	167,776	84.5	
Fishing and trapping	10,435	7,598	10,435	7,598	72.8	
Finance	82,963	77,723	82,963	77,723	93.7	
Services	585,413	534,644	487,577	450,792	92.5	
Professional	167,198	158,785	167,198	158,785	95.0	
Public administration	116,815	107,839	116,815	107,839	92.3	
Recreational	13,862	11,991	13,862	11,991	86.5	
Custom and repair	43,268	35,686	8,738	6,579	75.3	
Business service	5,081	4,530	2,235	1,974	88.3	
Personal	239,189	215,813	178,729	163,624	91.5	

^{1/} Figures taken from Table 11, Census Vol. VI.

Part 2.- The Number of Wage-Earners at Work as Enumerated in the Census of 1931,
and the Number of Employees Reported by the Employers Furnishing Employment
data on June 1, 1931.

Industries	Census Data			Monthly Employment Data			
	Total number at work, June 1, 1931. (Unspeci- fied workers shown separ- ately)	Total at work with the un- specified workers distributed proportion- ately among those whose industries were given	Relative weight of wage- earners, includ- ing un- specified workers	:Number :employed :by the :co-oper- :ating :employ- :ers, :June 1, :1931	Rel- ative weight, June 1, 1931	Rel- ative weight, June 1, 1935	Percentage of employ- ees included in June 1, 1931, survey of employ- ment, shown in Col. 4, to total wage-earners shown in Col. 2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
All Industries	2,100,139	2,100,139		940,875	100.0	100.0	44.8
The Included Industries	1,318,954	1,369,351	100.0	940,875	100.0	100.0	68.7
Manufacturing	570,146	591,944	43.2	489,837	52.1	54.0	82.8
Logging	28,795	29,877	2.2	14,520	1.5	2.9	48.6
Mining	46,934	48,712	3.5	47,210	5.0	5.9	96.9
Communications	32,463	33,700	2.5	27,087	2.9	2.3	80.4
Transportation	171,240	177,810	13.0	114,077	12.1	10.3	64.2
Construction	160,654	166,760	12.2	137,213	14.6	11.5	82.3
Services	68,418	71,046	5.2	22,766	2.4	2.8	32.0
Trade	240,304	249,502	18.2	88,165	9.4	10.3	35.3
Unspecified	77,296	-	-	-	-	-	-
The Non-included Industries	703,889	730,788					
Agriculture	167,776	174,192					
Fishing and trapping	7,598	7,907					
Finance	77,723	80,660					
Services	450,792	468,029					
Professional	158,785	164,891					
Public administ- ration	107,839	111,936					
Recreational	11,991	12,455					
Custom and repair	6,579	6,811					
Business service	1,974	2,051					
Personal	163,624	169,885					

Logging.— The difficulties of collecting current statistics relating to the logging industry are many - the highly seasonal nature of the work; the lack of established offices; the distance from the centres of population, frequently rendering communications low and uncertain; the growing practice of subletting contracts; the custom of purchasing logs from farmers who take them out with the help of their own families and neighbours, often employing in the accepted sense of the word few if any persons; the comparatively short active season in most of the provinces. A great many of the workers in logging necessarily follow it as a secondary occupation, being farmers, fishermen, mill employees, construction workers, general labourers, etc., etc., during the off-season for employment in the bush. The number engaged in logging constituted 2.2 p.c. of all census workers in the comparable industries, and 1.5 p.c. of the total reported by employers. The number actually at work in the reported camps was rather less than half of those enumerated at the census date, but in view of the attendant circumstances, it is felt this is an adequate sample of those actually engaged in logging at the time of the report, as well as probably being as large a representation as can possibly be obtained in a current survey.

Mining.— The employment statistics' representation in mining appears extraordinarily high (96.9 p.c.) mainly as a result of conditions in the coal-mining division. This is chiefly explained (1) by the fact that coal-mining is usually carried out on a large scale, and at accessible points, thus simplifying the collection of statistics, and (2) by a difference in the interpretation of the term "at work" on a given day, arising from the shift system and engendered by the practice undoubtedly followed by some employers of reporting the numbers on their staffs on the last pay day of the month. The importance of the reason given in (2) is emphasized by the fact that an exceptionally small proportion of the total number enumerated in the Census as in the coal-mining group reported themselves as actually at work on June 1, 1931, viz.; only 17,688 out of 31,296, or 56.5 p.c.; mining happens to be one of the few groups in which the census figures of persons at work and not at work at June 1, 1931, were not representative of conditions during the census year.

Of the total number classified in coal-mining (31,296), the employment statistics covered 73.2 p.c., a proportion which is more commensurate with the representation of those at work found in other industries; this proportion would naturally have been higher if the comparison had been made at a period of greater seasonal activity when the staffs of the co-operating coal-mining companies were larger.^{1/}

If coal-mining is excluded from both sets of figures, the employment statistics represented 75 p.c. of the census total of those at work in other mining industries. The relative weight of mining in the employment data was 5.0 p.c., as compared with that of 3.5 p.c. of those at work in the comparable industries according to the census enquiry; of the total persons at work and not at work as enumerated in the census, those classed in mining as a whole constituted over four p.c. The increase in the relative weight of mining in the employment data to 5.9 at June 1, 1935, is mainly due to the intense activity prevailing in the extraction of the precious metals.

Communications.— The 80.4 p.c. representation in the communications group is above the average, due to the necessarily monopolistic nature of the service and the highly efficient statistical services generally maintained by the organizations employing the persons enumerated. Those working on telephones are especially fully represented; it is likely that part of those enumerated as telegraphers at the census, are included under railway operation in the employment surveys. The relative weight of the communications division in the census was 2.5, as compared with 2.9 in the monthly employment record.

Transportation.— In the transportation group, the apparent representation amounted to 64.2 p.c., but this would have been higher had the industrial classifications been identical. For example, railway construction and maintenance staffs in the employment statistics' code are grouped under construction, but in the census classification those engaged in such work by the railways are partly included in transportation; workers on new construction are classed under construction, but the large number of maintenance hands are coded in transportation. It is impossible satisfactorily to re-arrange the grouping between this and the construction division. However, one important class of railway maintenance workers (viz., section hands) have here been removed from the census transportation group and added to construction. In reality, the concentration of railway employment in a few companies which cordially co-operate with the Bureau, naturally ensures an entirely adequate representation for the steam railway group.

^{1/} Thus, the June 1, 1931, index in ^{coal} mining was 92.2 p.c. of the 1926 average, while at Jan. 1 and Feb. 1 of the same year, the indexes were 106.9 and 104.1 respectively.

A large number of persons are engaged in driving vehicles for firms having only a few workers, about whom no current data are obtained, with the result that the representation for the local transportation industry is smaller than in many others; the navigation and shipping trades also present difficulties owing to the nature of the work, part of which is only casual. Nevertheless, a fair representation is found in each of these two divisions. The table shows that the relative weight of the transportation group, to all industries as 100 p.c., was 12.1 p.c. on June 1, 1931, compared with a proportion of 13.0 p.c. in the census returns.

Construction.— The construction group displays an apparent over-representation in the comparison, the relative weight in the employment statistics being 14.6 p.c., as against 12.2 p.c. in the census enumeration, while the employees reported by construction firms apparently constituted 82.3 p.c. of those reported in the census enquiry, a proportion considerably above the average. As already mentioned, some classes of workers included under construction in the monthly employment surveys, belong to transportation in the decennial census, while certain persons listed in the governmental construction group in the employment code are placed with public administration in the census statistics, mainly under the municipal group. It is impossible to make adjustment for these differences, but undoubtedly identical classifications would remove much of the apparent over-representation in construction. A discrepancy which was easily adjusted was the transfer of shipbuilding workers from construction, according to the census, to manufacturing in conformity with the employment statistics grouping.

Services.— This is one of the most difficult groups for which to obtain adequate representation in the current employment record, while it is also difficult to adjust the census data for purposes of comparison. The monthly employment surveys, in general, are limited to reports from employers having 15 persons and over. A large number of service establishments must obviously employ below this minimum, but in the aggregate, their employees are numerous. Examples of this class readily come to mind - ice cream parlours, small lunch rooms, small dyeing and cleaning establishments, shoe shining stands, etc., etc., many of which would employ only one or two assistants, and from which statistics could only be obtained in an exhaustive enquiry. Strenuous efforts have been made in the last few years to increase the representation of the various industries in the employment enquiries, particularly that among the non-manufacturing industries. Thus, the number of co-operating service firms increased from 276 on the census date to 458¹ on June 1, 1935, or by nearly 66 p.c., but the relative weight advanced by only 0.4 points to 2.8 p.c. at the latter date. This illustrates the difficulty of obtaining a representation in services commensurate with that existing in many other industries. In view of these circumstances, it seems as if an employment sample of 32.0 p.c. of the census figures for the comparable services were about as large as could be expected. The relative weight of workers in the service group in the employment records was 2.4 p.c. at June 1, 1931, or less than half of the adjusted census representation of 5.2 p.c. in the census total.

Trade.— The difficulties outlined in connection with securing adequate representation for services are also found in the collection of data for trading establishments, of whose employees the survey of employment at June 1, 1931, covered well over one third. It was necessary to adjust the census figures to make for better comparison with the employment classification, while a more complete adjustment, had it been possible, would have removed part of the apparent disparity. A very large proportion of distributing houses employ only a small number of persons; thus, the census of trading establishments, taken in conjunction with the 1931 decennial census, disclosed over 119,000² retail trading establishments, while the census enumerated some 202,700 wage-earners at work in retail trade at June 1, or an average of about two employees per establishment. (This figure of 202,700 has, of course, been altered to bring about greater though not complete comparability with the employment data; it is not possible also to adjust the number of establishments, but in any case, the average staff would still be very small). The average number of employees in wholesale trading establishments is also found to be small, being affected by the large number of sales agents with only a few persons on their staffs. The relative weight of trade according to the census was 18.2 p.c., or nearly twice that of 9.4 p.c. found in the employment record. However, 35.3 p.c. of the census workers in trading establishments, as adjusted for purposes of this comparison were covered in the monthly employment record, where the relative weight has increased from 9.4 p.c. on June 1, 1931, to 10.3 p.c. at the beginning of June in 1935; the number of co-operating trading establishments has risen from 826 on the former to 1,156¹ at the latter date, or by nearly 40 p.c. It is probable that the nature of the existing business organization in both trade and services will effectually limit the growth of

¹ See footnote on page 3.

² Exclusive of hotels, restaurants and cafes, etc., but including a certain number of establishments where there were no hired employees.

their ratios in the employment records, in spite of the unremitting efforts made to enlarge the scope of the enquiry into such lines.

SUMMARY.

The following summarizes the data in the most comparable form evolved by adjustment of the census figures:-

	<u>Relative Weights</u>		<u>Proportion of workers covered in the June 1, 1931, employment survey to the census total of persons at work in the included industries as 100 p.c.</u>
	<u>June 1, 1931</u>		
	<u>Census data</u>	<u>Employment data</u>	
	p.c.	p.c.	
Manufacturing	43.2	52.1	82.8
Logging	2.2	1.5	48.6
Mining	3.5	5.0	96.9
Communications	2.5	2.9	80.4
Transportation	13.0	12.1	64.2
Construction and maintenance	12.2	14.6	82.3
Services	5.2	2.4	32.0
Trade	18.2	9.4	35.3
All Industries	100.0	100.0	-
	1,369,351	940,875	68.7

Part of the discrepancies in the employment statistics' distribution as compared with that of the census has already been explained as due to differences in classification, and in part to the characteristics and organization of the given industry, which make possible a more or a less adequate representation. However, it is felt that the representation of industries, even of those in which the coverage is lowest, is sufficiently large to ensure that the current movements in employment are accurately reflected in the monthly index numbers.

2.- THE GEOGRAPHICAL DISTRIBUTION OF WORKERS.

A function of the employment index fully equalling in importance its ability to depict conditions in the different industries, is its ability to reflect the current fluctuations in industrial activity in the various units of population. In the economic areas, the comparisons with the census distribution of those at work are on a more satisfactory basis than in the case of the industrial comparisons, which are complicated by differences in classification. The comparisons of the city figures, however, are not so accurate as those between the provincial data, because of differences in the areas included under the municipalities in the census and the employment figures.

(a) By Economic Areas.

The samples of employment obtained monthly from firms in the various economic areas naturally differ to some extent in size, depending largely upon the industrial distribution of the employed population, while the scale on which business generally operates in a given unit of population is another influential factor. The concentration of industry within readily accessible areas, and the relative distance from Ottawa are also of importance in determining the proportion of the total number of workers that may be covered in a quickly-prepared monthly survey.

On the whole, the provincial distribution of the employees sampled in the monthly employment surveys agrees very satisfactorily with that of all workers in the comparable industries in the various units of population as enumerated in the 1931 Census, while the comparative weights of each of the five economic areas also showed a remarkably close correspondence in the two sets of figures. These analyses afford convincing

evidence that the samples of employment obtained in the monthly surveys penetrate deeply and uniformly into the industrial structure of the Dominion.

The following table compares the employment data with the census enumeration of those at work in all industries, and in the industries covered in the monthly employment surveys, for the five economic areas:-

Economic Areas	Census Data, June 1, 1931				Monthly Employment data, June 1, 1931		Proportion of the employees reported by co-operating firms at June 1, 1931, to	
	Total number at work	Rel. weight	No. at work in the included industries	Rel. weight	Employees reported	Rel. weight	All persons at work as enumerated in the census as 100 p.c.	Persons at work in the included industries as 100 p.c.
	(1)	(2) p.c.	(3)	(4) p.c.	(5)	(6) p.c.	(7)	(8)
Maritimes	174,310	8.3	109,871	8.0	72,086	7.7	41.4	65.6
Quebec	578,871	27.6	404,729	29.6	277,954	29.5	48.0	68.7
Ontario	807,410	38.4	544,554	39.8	386,070	41.0	47.8	70.9
Prairies	363,379	17.3	187,616	13.7	125,312	13.3	34.5	66.8
British Columbia	176,169	8.4	122,822	9.0	79,453	8.5	45.1	64.7
CANADA	2,100,139	100.0	1,369,351 ^{1/}	100.0	940,875	100.0	44.8	68.7

An analysis of the comparisons of the employment data with the census figures of the total number at work in all industries, shows that the smallest representation was in the Prairie Provinces where only 34.5 p.c. of the total were covered in the employment sample for June 1, 1931, a proportion much below the average; this of course is due to the peculiar industrial distribution of the employed persons. Thus, at the census date, over 18 p.c. of all wage-earners at work in the Prairies were engaged in farm work, excluded from the current surveys of employment, while in the Dominion the proportion of agricultural workers to the total at work was slightly under eight percent. In the Maritime Provinces, the proportion of total workers represented in the employment data was also below the Dominion ratio, similarly a result of the industrial distribution in that area, although the fact that the unit of production in the Maritimes is comparatively small is also a factor^{2/}. The concentration of the manufacturing and the distributive industries in Quebec and Ontario makes possible in the employment surveys for those provinces a greater-than-average sample of the total workers numerated in the census. Further, the comparatively easy distances from Ottawa and the relatively large scale of operation, are of assistance in this connection.

Coming now to the more significant comparison of the industries common to both sets of figures, it is evident that there is considerable uniformity in the representation for the various economic areas, this being greater than that found in the comparison with the

/ The above totals of the numbers at work in the included industries in the economic areas add to 1,369,592, as compared with the Dominion total of 1,369,351; this surplus of 241 (which is accompanied by a compensating shortage in the provincial totals for the non-included industries omitted from this table) is due to the unspecified workers, whose distribution between the included, and the excluded industries varied in the five economic areas. Had the unspecified workers in each province been assigned to the included and the non-included industries in the same proportion as in the Dominion as a whole, the discrepancies of 241 would disappear from the provincial totals for both included and excluded classes. While the difference is not sufficiently large to affect the proportions shown in columns (7) and (8) in this table, it causes the relative weights shown in column (4) to aggregate 100.1 instead of 100.0.

/ According to the records of the Industrial Census for 1931, the average employees per establishment in the Maritime Provinces was 11.7, as compared with the mean of 22.8 in the Dominion as a whole. While these averages refer only to factories, there is no doubt that on the whole there would be similar differences in the size of establishments in other industries, except coal-mining and logging.

total numbers at work. In British Columbia, the proportion of the number of employees covered in the employment sample to the total enumerated in the census as at work in the comparable industries was 64.7 p.c., a ratio that was lower than in the other sections of the Dominion. This is partly a result of the great distance between that province and Ottawa, while the importance of logging, lumbering, mining and canning in the industrial life of British Columbia tends to increase the difficulties of collection entailed by distance, since in many cases these operations are carried on in rather inaccessible places with more or less infrequent mail services.

The representation of 65.6 p.c. in the Maritimes was also slightly below the average of 68.7 p.c.; this is mainly due to the generally smaller scale on which operations there are carried on - the coal-mining and logging industries being, of course, the great exceptions.

The proximity of Quebec and Ontario to the collection centre, and the preponderance of manufacturing and distribution in their industrial composition, ensure that the employment sample for the Central Provinces should be larger than in the other economic areas. In Quebec, 68.7 p.c. of all persons at work in the included industries according to the census enumeration were represented in the employment sample; this was the same proportion as existed in the Dominion as a whole, while in Ontario the ratio was 70.9 p.c.

A brief analysis of the provincial relative weights for the included industries in the census enumeration and the employment surveys shows on the whole an extremely close correspondence between the two sets of figures, although it is again demonstrated that Ontario is slightly over-represented at the expense of the Maritime and Prairie Provinces and British Columbia, whose relative weights in the employment survey were fractionally lower than the census weighting. Such variation in the geographical representation appears unavoidable where the basis of inclusion in the monthly surveys is the employment of a staff of fifteen persons or more, and in order to maintain a fairly adequate representation of the various industries. The relative weights in Quebec were practically the same in the two enquiries.

The comparisons with the census data show that the monthly employment surveys include a considerable proportion of the workers in the comparable industries in each of the provinces, or provincial groups, whose relative weights correspond quite closely with the geographical distribution of workers within the Dominion as disclosed by the census figures. The comparisons also indicate a satisfactory uniformity in the size of the samples for the economic areas. These facts ensure that the monthly surveys of employment accurately reflect the current fluctuations in industrial activity.

(b) In the Four Largest Cities .

A tabulation of the number at work at June 1, 1931, as enumerated in the Census, was made only for the four largest cities - Montreal, Toronto, Winnipeg and Vancouver. The data shown in the following table are not wholly comparable, since the census statistics are collected at the place of residence and for the municipality, while the employment figures come from the place of work, and take in the employment afforded in the immediate vicinity of a municipality, as well as that within the city limits. In centres with satellite cities and nearby residential areas under independent civic management, these differences tend materially to raise the apparent size of the employment sample for the given city, and so make the comparison rather misleading. It is also likely that the employees of certain industries, or branches, located some distance from the municipality where their headquarters are situated, are included in the monthly tabulations for that city, since it is not always possible to recognize that distinction should be required. However, unceasing efforts are made to overcome this difficulty, and statistics in greater detail as regards location and industry are constantly being furnished by payroll officials.

In the following table are shown for the four leading cities, the census figures of persons at work in all industries, and in the industries included in the monthly surveys of employment, together with the numbers reported by the firms making returns for June 1, 1931.

Cities	Census Data, June 1, 1931.				Monthly Employment data, June 1, 1931		Proportion of the employees reported by co-operating firms at June 1, 1931, to	
	Total number at work	Rel. weight	No. at work in included indust- ries	Rel. weight	Employ- ees report- ed	Rel. weight	All persons at work as enumerated in the cen- sus as 100	Persons at work in the included industries as 100 p.c.
	(1)	(2) p.c.	(3)	(4) p.c.	(5)	(6) p.c.	(7) p.c.	(8) p.c.
Montreal	245,083	11.7	184,340	13.5	144,625	15.4	59.0	78.5
Toronto	205,865	9.8	145,992	10.7	123,216	13.1	59.9	84.4
Winnipeg	64,983	3.1	45,049	3.3	30,210	3.2	46.5	67.1
Vancouver	69,201	3.3	48,148	3.5	30,840	3.3	44.6	64.1
Total, four leading cities	585,132	27.9	423,529	31.0	328,891	35.0	56.2	77.7
CANADA	2,100,139	100.0	1,369,351	100.0	940,875	100.0	44.8	68.7

The extremely large representation in Montreal and Toronto is no doubt mainly due to a difference in definition of the municipal area, although their proximity to Ottawa and the concentration of large-scale industrial operations in these two centres are sufficient in any case to ensure a sample that is above the average. In Winnipeg and Vancouver, on the other hand, the employment statistics' coverage of the total workers in the comparable classes of industries is below the Dominion average of 68.7 p.c.; however, the variations are not pronounced.

An analysis of the relative weights shows the same apparent over-representation in Montreal and Toronto, but the explanation of the discrepancies (which are not unduly large) lies in the facts already given. The Winnipeg and Vancouver relative weights in the employment record correspond satisfactorily closely with those of the total number at work at the census date.

